

R E M A R K S

Claims 1-40 remain in the case. Reconsideration is requested in light of the above amendments and the following comments.

The Examiner is thanked for providing Applicants this opportunity to be fully responsive to this Office Action and thereby to the prior Office Action as well. The oversight by the undersigned was inadvertent and unintentional.

The Amendments

By this amendment, the independent claims all specify, *inter alia*, that (a) the molar quantity of the 1,3-dibromo-5,5-dialkylhydantoin(s) introduced into the aqueous medium (or water) is less than the molar quantity of N,N'-bromochloro-5,5-dimethylhydantoin that would be required therein to effect the same degree of microbiological control, (b) the quantity of the 1,3-dibromo-5,5-dialkylhydantoin(s) introduced into the medium (or water) releases an amount of "free chlorine" that is greater than the amount of "free chlorine" that would be released in therein by an equimolar quantity of N,N'-bromochloro-5,5-dimethylhydantoin, and (c) the amount of "free chlorine" released by the quantity of the 1,3-dibromo-5,5-dialkylhydantoin(s) introduced into the medium (or water) is greater than the amount of "free chlorine" that could be predicted to be released by that quantity of the 1,3-dibromo-5,5-dialkylhydantoin(s) on the basis of the amount of "free chlorine" that would be released therein by an equimolar quantity of N,N'-bromochloro-5,5-dimethylhydantoin. This is supported by the disclosure for example at page 7, lines 17-28. In making these amendments, better antecedent basis for terms used and simplification of wording used has been effected for improved clarity and succinctness. In addition, independent claims 1, 16, 20, and 24 have been amended to make clearer that the packaging material of these articles comprises a closed container in which the product is enclosed, which is clear from the specification, such as at page 15, line 17 through page 16, line 20, page 10, lines 1-3, and page 61, lines 18-22. Claims 1, 16, 20, and 24 have also been amended to make clearer

that a product is contained within the packaging material, which amendment is supported by original wording of the claims themselves. Suitable amendments have been made in the dependent claims to make the wording consistent as regards "product". Moreover, instead of referring to an optional ingredient, the independent claims now spell out the two situations covered by the original independent claims, namely that the product is the dibromohydantoin or a mixture of the hydantoin and the inert material in proportions of at least 95 wt% of the hydantoin and up to 5 wt% of the inert material. These amendments are also supported by the original claims themselves since they merely restate what the original claims specified. The amendment of Claim 4 provides proper antecedent basis for the limitations in that claim. The amendment of Claim 6 places the subject matter in proper context since the support for Claim 6 at page 13, lines 20-24 does not limit the DBDMH to the particle size of Claim 2. The weight percentage values now given in Claims 14 and 15 are based on the disclosure for example at page 8, lines 1-9.

Response to Prior Art Rejections

At the outset, it is noted that Claims 8-10, 22, and 34-35 are apparently in allowable condition since no rejection has been applied against these claims.

Before discussing individually each of the two art rejections remaining in the case, it seems appropriate at the outset to again point out some of the sharp inventive distinctions between all the rejected claims in the case and the two applied references Bottom et al. 4,597,941 ("Bottom") and White et al. 4,119,535 ("White"). All of the claims in the case now specify, *inter alia*, that firstly, the molar quantity of the 1,3-dibromo-5,5-dialkylhydantoin(s) introduced into the aqueous medium (or water) is less than the molar quantity of N,N'-bromochloro-5,5-dimethylhydantoin that would be required therein to effect the same degree of microbiological control, secondly that the quantity of the 1,3-dibromo-5,5-dialkylhydantoin(s) introduced into the medium (or water) releases an amount of "free chlorine" that is greater than the amount of "free chlorine"

that would be released in therein by an equimolar quantity of N,N'-bromochloro-5,5-dimethylhydantoin, and thidly that the amount of "free chlorine" released by the quantity of the 1,3-dibromo-5,5-dialkylhydantoin(s) introduced into the medium (or water) is greater than the amount of "free chlorine" that could be predicted to be released by that quantity of the 1,3-dibromo-5,5-dialkylhydantoin(s) on the basis of the amount of "free chlorine" that would be released therein by an equimolar quantity of N,N'-bromochloro-5,5-dimethylhydantoin. There is nothing in either Bottom or White to suggest these three features. In fact, at Column 6, lines 12-22, and again at Column 8, lines 1-10, Bottom equates DBDMH, DBDMH, and BCDMH, and indeed further equates these substances with trichloroisocyanuric acid and in the latter description, with dichloroisocyanuric acid as well. Although White indicates that DBDMH is believed to possess the greatest number of advantages of the possible materials to be used in that invention, no mention is made of BCDMH in White. Instead, White teaches use of DBDMH and/or other bromocompounds (Column 7, line 52 to Column 8, line 3) with such chlorine products as sodium hypochlorite, calcium hypochlorite, and lithium hypochlorite (Column 10, lines 66-68). Thus there is no basis in White for suggesting the above three features of the presently-claimed invention.

Moreover another document, Girard 4,537,697 of record, provides information indicating that results achievable by the present invention would not be possible. In particular, all of the claims specify, *inter alia*, to the effect that:

the amount of "free chlorine" released by the quantity of the 1,3-dibromo-5,5-dialkylhydantoin(s) introduced into the medium (or water) is greater than the amount of "free chlorine" that could be predicted to be released by that quantity of the 1,3-dibromo-5,5-dialkylhydantoin(s) on the basis of the amount of "free chlorine" that would be released therein by an equimolar quantity of N,N'-bromochloro-5,5-dimethylhydantoin.

To illustrate this feature, the following table presents the "free chlorine" data

appearing in Applicants' Table 1 and compares the percentage improvement provided by the DBDMH versus the BCDMH over the time period of the experiment.

TABLE 1

Time, hr	BCDMH Free Cl ₂	DBDMH Free Cl ₂	% Improvement, DBDMH v. BCDMH
0	23.1	98.8	327.7%
0.5	25.6	100	290.6%
1	23.1	85.1	268.4%
1.5	17.9	87.3	387.7%
2	16.6	81.6	391.6%
3	16.6	70.1	322.3%
4	30.7	65.5	113.4%
5	15.4	60.1	290.3%
6	10.2	59.8	486.3%

In sharp contrast, the data in Table 1 of Girard shows that the "free chlorine" from DBDMH was 80% and the "free chlorine" from BCDMH was 54%, which means that the improvement shown by Girard for DBDMH over BCDMH was only 48.2%, as compared to the much higher improved results achieved by Applicants which ranged from a 113.4% improvement of DBDMH over BCDMH to a 486.3% improvement of DBDMH over BCDMH. Thus from Girard's data one could not predict Applicants' discovery as set forth in the claims that the amount of "free chlorine" released by the quantity of the 1,3-dibromo-5,5-dialkylhydantoin(s) introduced into the medium (or water) is greater than the amount of "free chlorine" that could be predicted to be released by that quantity of the 1,3-dibromo-5,5-dialkylhydantoin(s) on the basis of the amount of "free chlorine" that would be released therein by an equimolar

quantity of N,N'-bromochloro-5,5-dimethylhydantoin. From Girard one could only predict a 48% improvement whereas as shown by Applicants, improvements in the range of 113% to 486% were achieved. There is nothing in any of these references to suggest this, muchless make such an improvement obvious. Accordingly, Girard provides powerful evidence in support of the patentability of all of the present claims.

Thus, contrary to the contention made in the Action, Applicants have indeed provided unexpected results that are achieved from the administration of the active ingredient of the present claims. That is, the magnitude of the difference in the levels of effectiveness as between the present active ingredient and BCDMH is far greater than taught in the prior art by Girard. There is no way by which anyone of ordinary skill in the art could have predicted muchless found obvious that such a magnitude of difference could be achieved.

We turn now to the two individual prior art rejections.

The rejection of Claims 1-7, 11-17, 19-21, and 23-25 under 35 USC 103(a) on Bottom et al. 4,597,941 ("Bottom") is inapplicable and should be reconsidered and withdrawn. In addition to the patentable features discussed above, there are still other patentable features in Claims 1-7, 11-17, 19-21, and 23-25.

Firstly, as acknowledged in the Action, Bottom does not specify the presence of a label. Ergo, it follows that Bottom does not provide any of the presently-specified contents of any label. Thus Bottom does not and cannot suggest the surprising beneficial results made possible in use by following the content of the label pursuant to the present invention. Such beneficial results are described in the specification and include the surprising results depicted in the drawings, and as discussed above.

Moreover, Claims 1-7, 11-17, 19-21, and 23-25 all specify that the packaging material comprises a closed container in which the product is enclosed. Bottom does not deal with or describe any such container. Instead Bottom deals with materials to be introduced into a toilet-cleaning article or dispenser and dispensed therefrom when a toilet is flushed. Moreover the Bottom article or dispenser is not a **closed** container as it contains port **31** which is open in order to allow the water solution to be transported to the toilet bowl. Furthermore, the Bottom article or dispenser requires that the dye and the biocide are separated from each other by partition **12**. Thus in Bottom there is no product within a closed container that consists of (i) at least one 1,3-dibromo-5,5-dialkylhydantoin or (ii) a mixture made up of at least 95 wt% of at least one 1,3-dibromo-5,5-dialkylhydantoin and up to 5 wt% of one or more inert ingredients. Further, present Claims 1-7, 11-17, 19-21, and 23-25 involve cooperation or interrelationship among a container, at least one label, and the contents of at least one label that gives rise to unexpected advantageous results from use of the product.

Accordingly, the rejection based on Bottom is deemed inapplicable, and reconsideration and withdrawal of the rejection is requested.

The rejection of Claims 1-7, 11-13, 16-19, 25-33, and 36-40 under 35 USC 103(a) on White et al. 4,119,535 ("White") is also inapplicable and should be reconsidered and withdrawn. In addition to the patentable distinctions over Bottom given above, the following further patentable distinctions in the claims are to be noted.

Firstly, White requires a large amount of either NaHSO_4 (at least 45.6 wt%) or of Na_2CO_3 (at least 27.0 wt%) in order for the White invention as summarized by the equations given on and in columns 5 and 6 to perform. For example, at column 5, line 64 through column 6, line 4, White states as follows:

Both of the reactive agents are present, in their respective mixtures, in amounts **in excess** of that required to liberate all of the bromine present, with the amounts of such excess being carefully determined to provide the desired results, *i.e.*, that introduction of the material in accordance with the present method will provide proper correction of the pH value and simultaneously provide the desired concentrations of available bromine. [emphasis added]

And at column 7, from lines 9 to 27, White makes clear that the stoichiometric amount required is 45.6 wt% of NaHSO₄ with DBDMH and 27.00 wt% of Na₂CO₃ with DBDMH. In fact, at column 7, lines 29-51 White describes mixtures according to the White invention wherein the mixtures were described as 3.33 wt% DBDMH and 96.67 wt% Na₂CO₃, and 3.33 wt% of DBDMH and 96.67 wt% of NaHSO₄. White further indicates that the excess of the Na₂CO₃ and the excess of NaHSO₄ were utilized for increasing the pH of the pool water, one of the important requirements of the mixture.

Clearly, such compositions bear no resemblance to the presently-claimed mixtures which allow for the presence in the packaged product of only up to about 5 wt% of specified inactive ingredients. Such inactive ingredients as defined in Claims 1-7, 11-13, 16-19, 25-33, and 36-40 do not allow for the presence of an inactive ingredient in the amounts called for by White.

Moreover, since White **requires** a large amount of either NaHSO₄ (at least 45.6 wt%) or of Na₂CO₃ (at least 27.0 wt%) in order for the White invention to perform, there can be no suggestion for anyone to use a smaller concentration of either such material. To reduce or eliminate the specified amounts of NaHSO₄ or Na₂CO₃ required by White would not only completely rewrite the White disclosure, but render the White disclosure incapable of functioning or operating in the manner described by White. An obviousness rejection, when based a modification rendering the reference inoperable for its intended purpose, is inappropriate. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Also see *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780

(Fed. Cir. 1992). See also, *Ex parte Rosenfeld*, 130 USPQ 113 (Bd. App. 1961), *Ex parte Westphalen*, 159 USPQ 507 (Bd. App. 1967), *Ex parte Thompson*, 184 USPQ 558 (Bd. App. 1974).

From the above, it is deemed clear that the rejection of Claims 1-7, 11-13, 16-19, 25-33, and 36-40 is inapplicable. Accordingly, reconsideration and withdrawal of this rejection is also requested.

Before leaving the prior art rejections, it is also to be noted for the record, that dependent claims in the case contain limitations which render them patentable over the prior art for reasons beyond those discussed above. However, since the claims are deemed allowable on the basis of the above amendments and remarks, these limitations need not be discussed at this time.

Response to Provisional Double Patenting Rejections

In the Action, three provisional rejections under the judicially created doctrine of obviousness type double patenting were made.

The first is of Claims 25, 39, and 40 as unpatentable over Claims 22-36 of copending application no. 09/484,938. The second is of Claim 25 as unpatentable over Claims 1, 2, 16, 17, 23, and 30-33 of copending application no. 09/974,626. The third is of Claim 25 as unpatentable over Claims 1-5 of copending application no. 09/775,516. Applicants strongly disagree with the contention made in the latter two provisional rejections that labeling and packaging would be obvious. However, for the sole purpose of expediting prosecution and without in any way acquiescing in the view that labeling and packaging would be obvious, let alone acquiescing in the view that labeling and packaging in the manner specified in the present claims would be obvious, terminal disclaimers signed by an attorney of record herein accompany this response along with a paper authorizing that the fee for these terminal disclaimers be charged to a Deposit Account. Accordingly, these provisional double patenting rejections have been rendered moot.

Response to Requirement for Restriction

Restriction has been required among three (3) Groups of inventions. Applicants hereby provisionally elect with traverse the inventions of Group I., namely Claims 1-24 drawn to article of dibromohydantoin active, classified in class 514, subclass 389. However, Applicants traverse the Requirement on the ground that the requirement could greatly increase the time, effort, expense, and paperwork of all concerned as the result of the handling and prosecution of three (3) patent applications instead of only one.

Response to Requirement for Election of Species

Firstly, we thank the Examiner for the clarification of this requirement during the undersigned's telephone call to the Examiner on March 14, 2003.

Applicants hereby provisionally elect to prosecute the species 1,3-dibromo-5,5-dimethylhydantoin. Of the provisionally elected claims of Group I., the following are readable on this species: Claims 1-7, 11, 12 and 13 (partially, as these are multiply-dependent claims), 14-17, 19 and 20.

Of all the claims in the case the following are readable on 1,3-dibromo-5,5-dimethylhydantoin: Claims 1-7, 11, 12 and 13 (partially, as these are multiply-dependent claims), 14-17, 19-21, 23, 24, 25 (partially, as this is a multiply-dependent claim), 26-32, 36, 38, 39 (partially, as this is a multiply-dependent claim), and 40. To be complete, although because of Requirement for Restriction the claims of Group I. have been elected, Applicants also provisionally elect as between the species of active non-hydantoin, the species cyanurate. Of all of the claims in the case, the following are readable on the cyanurate species: Claims 26-37, 38 (in part), and 39-40.

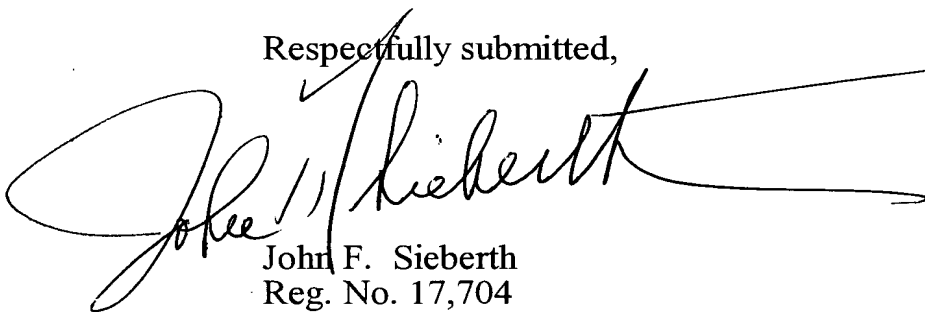
Applicants contend that all of Claims 1-40 are allowable for reasons given above, and thus that the requirement for election of species is no longer applicable.

Conclusion

It is believed that the case is in condition for allowance. Notice to this effect would be appreciated. If, however, any matters remain in requiring further consideration, the Examiner is respectfully requested to telephone the undersigned so that such matters can be discussed, and if possible, promptly resolved.

Please continue to address all correspondence in this Application to Mr. Philip M. Pippenger at the address of record.

Respectfully submitted,



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CERTIFICATE OF MAILING

I hereby certify that in accordance with standard business practice, this paper (along with any referred to as being attached or enclosed) is to be deposited on the date shown below with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231.

March 24, 2003
Date

Marie H. Zoller
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